OOOO11263

CORRES. CONTROL
OUTGOING LTR NO.

DOE ORDER #
93 RF 12476

DIST.	LTR	ENC
AMARAL, M.E.		
BENEDETTI, R.L.	X	
BENJAMIN, A.		
BERMAN, H.S.		
BRANCH, D.B.		
CARNIVAL, G.J.		
COPP, R.D.		
DAVIS, J.G.		
FERRERA, D.W.		
HANNI, B.J.		
HARMAN, L. K.		
HEALY, T.J.		
HEDAHL, T.		
HILBIG, J.G.		
KIRBY, W.A.		
KUESTER, A.W.		
MANN, H.P.	X	
MARX, G.E.		
McDONALD, M.M.		
McKENNA, F.G.		
MONTROSE, J.K.		
MORGAN, R.V.		
POTTER, G.L.		
PIZZUTO, V.M.		
RILEY, J.H.		
RISING, T.L.		
SANDLIN, N.B.		
SETLOCK, G.H.		
STEWART, D.L.		
SULLIVAN, M.T.		
SWANSON, E.R.		
WILKINSON, R.B.	X	
WILLIAMS, S. (ORC)		
WILSON, J. M.		
WYANT, R.B.		
McHugh MF	X	
Busby WS	X	
Bantzer K	X	
Hiler DA	X	
Sophie	X	
Holloway L	X	
Deville K	X	
Record Ctr (2)	X	
CORRES CONTROL	X	X
ADMIN RECORD		
PATS/T130G		
TRAFFIC		

CLASSIFICATION:

UCNI		
UNCLASSIFIED		
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER SIGNATURE
DOCUMENT CLASSIFICATION ~~REVIEW WAIVER PER~~ CLASSIFICATION OFFICE

DATE

IN REPLY TO RFP CC NO:
4211-RF-93

ACTION ITEM STATUS
☐ PARTIAL/OPEN
☒ CLOSED

LTR APPROVALS:
WSB: [initials] MFM: MFM

ORIG & TYPIST INITIALS
MFM/dmt

RF-46469 (Rev. 7/93)

EG&G ROCKY FLATS

EG&G ROCKY FLATS, INC.
ROCKY FLATS PLANT, P.O. BOX 464, GOLDEN, COLORADO 80402-0464 • (303) 966-7000

October 7, 1993 93-RF-12476

J. K. Hartman
Assistant Manager
Transition and Environmental Restoration
DOE, RFO

Attn: B. K. Thatcher

RESPONSE TO THE REGULATORY AGENCIES' COMMENTS ON STANDARD OPERATING PROCEDURES (10206) - NMH-526-93

Enclosed are six copies of the responses to the Colorado Department of Health (CDH) and the Environmental Protection Agency (EPA) comments on the Standard Operating Procedures (SOPs) GT.08 and the Revised GT.08 document. Two copies each should be forwarded to CDH and EPA for their approval. Relative to the specific concerns that were raised in your letter referenced above, the grab method section has been improved as requested. EG&G Rocky Flats, Inc. is planning to conduct a dry run of these sampling procedures the week of October 18-22, 1993. Assuming that there are no new problems, we would like to begin surficial soil sampling in Operable Unit (OU) 10 shortly thereafter, and request that you grant us permission to use the procedure GT.08.

The revised GT.08 addresses all of the concerns raised by reviewers from CDH, EPA, and the Department of Energy, Rocky Flats Office (DOE, RFO). All of the previous Document Change Notices (DCNs) and Document Modification Requests (DMRs) submitted to Document Control as of this date have been included in this revision of GT.08. Several approved OU Work Plans reference GT.08 and Technical Memorandum No. 5 for OU 1 for soil sampling. This issue has been resolved. Where there is the possibility of misunderstanding, the affected OU manager will prepare a clarifying letter for transmittal to the regulatory agencies.

DOCUMENT CLASSIFICATION REVIEW WAIVER PER CLASSIFICATION OFFICE

If you have any questions or require additional information regarding this matter, please contact M. F. McHugh of Remediation Project Management at extension 8624.

N. M. Hutchins
Acting Associate General Manager
Environmental Restoration Management
EG&G Rocky Flats, Inc.

MFM:dmf

Orig. and 1 cc - J. K. Hartman

Enclosures:
As Stated

cc:
A. H. Pauole - DOE, RFO
R. J. Schassburger - " "

RE: Response to Colorado Department of Healtl
Surficial Soil Sampling

GENERAL COMMENTS

Comment #1: Training - there is no mention of the mi personnel (see section 3.0).

Response: The statement, "Personnel sampling surface s field technicians trained to conduct hazardous waste s 1910.120. These personnel will also have experience qualified individual as specified in 3-21000-ADM-02.01, trained in the appropriate application of the standard oper to the first paragraph of Section 3.0 to address minimum personnel.

Comment #2: Personnel Protective Equipment - s potentially hazardous materials. They should have some can be included in section 3.0. If this is covered under t be briefly mentioned (see related comment in section 4.2

Response: The statement, "The required personal protect soils will be detailed in the health and safety plan conducted.", has been added to the second paragraph c protective clothing for sampling personnel.

Comment #3: Intrusiveness - several methods des and require excavation of ground cover. Surficial soil san Perhaps the SOP should be renamed to delete the word " sampling" (see related comments in sections 1.0 and 5.2.4

Response: The intrusiveness intended for this SOP was for " soils are defined for the purposes of this SOP as those soils to one meter.

DOCUMENT-SPECIFIC COMMENT

1.0 Purpose

Comment: Define the term "near-surface." Even thoug text, this is a good place to distinguish what is encompa

Response: Near surface was defined as the depth inter

3.0 Prerequisite

Comment: Define the "appropriate" amount of "applicable" field experience. Reading the OU-specific FSP is obvious. How can we ensure that the field personnel are adequately trained in sampling methodology? What are the requirements of the "qualified person" who will be supervising? The Division does not feel that having read this SOP and other applicable SOPs is enough to train the sampling personnel on the proper procedures for sampling - protocol, methods, equipment, handling, and management.

Response: The statement, "Personnel sampling surface soils will be scientists, engineers, or field technicians trained to conduct hazardous waste site work, as required by 29 CFR 1910.120. These personnel will also have experience under the direct supervision of a qualified individual as specified in 3-2100-ADM-02.01, Rev. 0 and 02.02, Rev. 0; and be trained in the appropriate application of the standard operating procedures.", has been added to the first paragraph of Section 3.0 to address minimum training requirements for sampling personnel.

4.0 Methods for Surface Radionuclide Sampling

Comment: "If the objective of sampling is other than those described above, special collection techniques could be required. When this occurs, the project manager should seek expert advice..". Who is to provide this "expert advice" and how do we ensure such advice does not invoke a deviation from the FSP?

Response: This statement has been deleted from the SOP.

4.1.3 Sampling Plot Layout - CDH Method

Comment: The FSPs specify what grid spacing to use. This section discusses subsample layout in plots where grid spacing is undefined. Is this really applicable?

Response: This section has been modified to indicate that the OU specific FSPs will specify what grid spacing to use.

4.1.4 Procedures - CDH Method

Comment:

1. Specify the type of sample container to use.
2. Specify the information to be included on the label.
4. Specify what is considered as "undesirable" top layer. This statement occurs throughout the SOP.

11. Specify the paperwork that must be transferred with the sample (chain-of-custody, etc.)

Response:

1. The statement, "Refer to procedure FO.13, Containerization, Preserving, Handling, and Shipping of Soil and Water Samples for the appropriate type of container.", has been added to address this comment.

2. The statement, "Refer to procedure FO.13, Containerization, Preserving, Handling, and Shipping of Soil and Water Samples for the proper type of information to be included on the label.", has been added to address this comment.

4. The statement, "Undesirable material is defined as; rocks, gravel, pebbles, scree, road base, paving material, vegetation or other organic material." has been added to the end of Step 3 to address this comment.

11. The statement, "Refer to procedure FO.13, Containerization, Preserving, Handling, and Shipping of Soil and Water Samples for the proper paperwork and sample transfer methods.", has been added to address this comment.

4.2 Soil Sampling with the RF Method

Comment: Clarify the numerical description of the jig area. "The jig outlines a 10-cm) sic square area..." can be interpreted as a 10 cm2 area or a square with 10-cm sides (100 cm2).

Response: The sentence has been changed to read, "The jig outlines a square area with 10-cm sides and is driven 5 cm into the soil to cut three sides of the sample."

4.2.3 Sampling Plot Layout - RF Method

Comment: "The sample collection crew should be accompanied by supervision...". Shouldn't this be true of all sampling activities?

Response: The last sentence of paragraph one was changed to read, "Sample collection crews will be accompanied by supervision for all sampling activities to ensure that specified procedures are followed".

Additionally, paragraph four of the same section has been changed to specifically address field adjustment of sample locations, and provisions for possible regulatory concurrence.

4.2.4 Procedures - RF Method

Comment: 5. "If the soil is moist, gently crush soil aggregate with finger...". Sampling personnel should be required to wear gloves, to protect not only themselves but the samples too.

Response: The sentence has been changed to "...crush soil aggregate with fingers while wearing proper personal protective equipment as prescribed in the applicable Health and Safety Plan,...".

4.3 Soil Sampling with the Grab Method

Comment: This section is far too vague. Section 4.5 (Surface Soil Sampling Below Asphalt or Concrete) and specifically section 4.5.5 (Sampling Procedure - Grab Method) gives the appropriate detail. Nothing beneficial is said here - either include a reference to the above sections or delete this section altogether.

Response: The references to this section were incorrect in the review copy. The appropriate corrections have been made.

4.4.7 Procedure for Sampling Under Asphalt and Concrete - Vertical Profile

Comment: 5. Correct reference to previous section should be 4.4.4, 4.4.5, and 4.4.6. Better yet, this should be rolled into section 4.5, which could then describe all types of soil sampling below asphalt or concrete (grab, vertical profiles, etc.).

Response: Reference section numbers were corrected to 4.4.4, 4.4.5, and 4.4.6.

4.5.4 Sampling Procedure - Grab Method Below Asphalt or Concrete

Comment: 7. "If the nature of the asphalt allows, the use of a pick will be substituted for the concrete core drill...". Who makes this determination? A pick would seem to have greater potential to disturb the soils that are to be sampled.

Response: The note in subparagraph (7.) concerning using a pick on asphalt surfaces was deleted.

4.6.5 Procedures for Sampling Core - Top and Bottom One-Fifth

Comment: 4. & 5. Nothing is said on how the top and bottom portions of the cut are to be managed. Are they supposed to be mixed together or handled separately?

7. This statement makes no sense.

Response: These comments were addressed by adding section 4.6.6.

5.2.4 Procedures - Sampling with a Hand Auger

Comment: 3. Borehole depths of up to 38 inches are described. Are these truly "surfacial soils:? (See related comment #3 in the "general comments" section).

Response: Previously addressed under No. 3. General Comments.

5.4.2 Equipment and Materials - Wipe and Pavement Sampling for PCBs

Comment: a solvent (such as isooctane)... The "such as" wording allows too much ambiguity. Specify the exact solvent(s) that are to be used.

Response: The words "such as" were deleted.

October 7, 1993

RE: Response to U.S. Environmental Protection Agency Comments on Procedure GT.08, *Surficial Soil Sampling*

GENERAL COMMENTS

Comment #1: Additional illustrations of the sampling equipment, subsample location procedure, and compositing procedure would improve utility to the document and prevent misunderstandings in the field. Appropriate figures for several procedures have appeared in previous RFP documents and should be included in this SOP.

Response: The responses to Specific Comment No.s 2, 3, 5, and 6 address this comment.

Comment #2: Section 4.3 on grab sampling is inadequate and needs significant improvement to equal the detail provided in other sections. This section relies on other sections within the SOP without specifically citing the sections.

Response: The response to Specific Comment No. 7 addresses this comment.

Comment #3: Details were not consistently addressed from method to method, such as methods for entering sampling information into logbooks, decontaminating the samples, labeling the samples, finding the location of the samples, photographing the sample sites, and refilling sample holes. Where applicable, these procedures must be standardized. Adding figures, such as an example sample label in the appendix, would help standardize the document.

Response: The procedure has been reviewed for inconsistencies and standardized where appropriate.

Comment #4: Photographing sampling locations is listed as a requirement in Sections 4.4 through 4.5 of this document. While this is useful in some cases, photographs should not be a requirement of the SOP, but instead left to the discretion of the project manager.

Response: Statements have been added to these sections which make photographing sample locations optional, at the discretion of the field crew supervisor.

If a significant feature or something out of the ordinary is encountered that may effect sampling and should be documented; then a photograph will be taken.

SPECIFIC COMMENTS

Comment #1: Section 4.0, Page 5, Paragraphs 2 and 3. Paragraph 2 lists four objectives for surface soil sampling at the RFP, but does not explain these objectives in any detail. Paragraph 3 relates the four methods of soil sampling to slightly different objectives than those listed in the previous paragraph. To improve the usefulness of this document, each of the objectives in paragraph 2 must be briefly explained and the appropriate method must be more clearly recommended for these objectives in the following paragraph.

Response: The first four paragraphs of Section 4.0 have been replaced with the following:

> The purpose of surface soil sampling at the RFP can be related to one or more specific objectives. These are as follows: 1) resuspension availability, which determines if radionuclides are present in the top-soil that could become resuspended in the air and thus pose a migration pathway by inhalation; 2) deposit inventories, which determine the amount of accumulated radionuclides deposited on the ground; 3) distribution of contaminants, which defines the areal distribution of contaminants; and 4) deposition increment, which defines the distribution with depth of radionuclides in the top 6 inches of soil to verify the results of the HPGe surveys.
>
> To meet these objectives there are four radionuclide, surface soil sampling methods employed at RFP: 1) Colorado Department of Health (CDH) method, designed to sample for resuspension availability; 2) Rocky Flats (RF) method, designed to sample for deposit inventories; 3) Grab Sampling method for under asphalt and concrete, or where contamination may have occurred from a given point source, designed to sample for contaminant distribution; and 4) Vertical Soil Profile method, designed to sample for deposition increment.
>
> Any or a combination of these sampling methods may be used as specified in the site-specific FSP. It should be noted that the CDH or RF methods are normally used in unpaved areas. However, grab sampling (spade and scoop) for radionuclides may be necessary for some RFP locations where the CDH or RF methods are not appropriate. Such as where contamination may have occurred from a given point source, or where a point source may have contaminated a very small or localized area. The sample type, basis for collection and required methodology can be determined by consulting the applicable workplan.

Comment #2: Section 4.1.3, Page 7, Paragraph 3. This paragraph describes the method for locating subsample points that will comprise the composite sample for the Colorado Department of Health (CDH) soil sampling method. As presented, the discussion contains several steps that may be difficult to follow. A figure must be included with this discussion to clarify the procedure used to select the subsample plots.

Response: Upon closer review, the first three paragraphs of Section 4.1.3 were found to be a OU-specific procedure which should have been included in the OU-specific FSP. In order to make this procedure (GT.08) more universal, these three paragraphs have been deleted and replaced with the following:

> A specified number of samples will be collected and composited from within sample plots. Under this scenario, the target locations of the samples will be described by an evenly spaced grid as specified in the site-specific FSP.
>
> Preliminary location of sampling points will be achieved by staking and flagging the points. The sample points will be located by taping, use of a measuring wheel, or by pacing, combined with the use of a Brunton compass. The sample plot layout will attempt to achieve location accuracies of within + or - 10 feet of the proposed work plan data acquisition points, as specified in procedure GT.17, Land Surveying. After all of the samples are collected within a sample plot; the southwest corner of the sample plot will be surveyed, using standard land surveying or global positioning system (GPS) methodologies. Refer to procedures GT.17, Land Surveying, GT.27, Autonomous Operation Of Global Positioning Equipment, GT.28, Differential Post Processing of Global Positioning Equipment and GT.29, Real-Time Differential Operation Global Positioning Systems, for methods and acceptable uncertainty and range for the distance measurements made. Sample locations will be marked with a permanent identification, as designated in the FSP, so that the area may be located and resampled at a later date.

Comment #3: Section 4.2.1, Page 9, Paragraph 5. This paragraph describes the jig and scoop used in the RF soil sampling method. The configuration of the equipment is not clear. A figure of the sampling equipment similar to that provided for the CDH method should be included with the description of the sampling equipment.

Response: Figure GT.8-2 has been added to illustrate the jig used for the RF method.

Comment #4: Section 4.2.3, Page 10, Paragraph 4. This paragraph gives the crew supervisor discretion in selecting a sampling location in the event that all the site selection criteria cannot be met. It must also state that the crew supervisor shall record which of the site selection criteria were not available at the chosen sampling site on the data collection form.

Response:

In response to a comment from CDH, this paragraph has been changed to state the following:

> If a sample site is not available that meets the criteria described in the FSP, the location can be moved up to one-half the distance to the next grid sample location or within 10 feet of a staked sample location which is not part of a grid. If the sample location must be moved further than this distance, regulatory agency concurrence will need to be obtained. Any movement of sample locations will be

concurrence will need to be obtained. Any movement of sample locations will be documented on the surface soil data collection form and in the field crew supervisors logbook.

Comment #5: Section 4.2.4, Page 11, Paragraph 1. This paragraph describes the method used to locate subsamples for the RFP soil sampling method. The instructions are complex and may lead to confusion in the field. A figure of the subsampling plot location must be included with the description of the subsample plot location.

Response: Figure GT.8-3 has been added to illustrate this sample collection spacing.

Comment #6: Section 4.2.4, Page 11, Paragraph 6. This paragraph is part of a series of directions on how to sample with the RFP method. The direction states that the sampler should divide the sieved soil into four subsamples and sample each quarter. The four subsamples are then to be placed into one plastic bag. The present discussion does not explain why the soil is being split into four parts and then combined back together as one sample. Without some explanation, it is unclear if this procedure is correct as stated.

Response: The purpose for quartering the sample and then collecting subsamples from each quarter is to reduce the volume of sample sent for analysis (while still maintaining a representative sample) to approximately 1 kg or one 1-gal paint can.

To clarify this step, Section 4.2.4, Step 6 has been changed to read:

> In order to reduce the volume of the sieved sample to the quantity required for laboratory analysis, and still maintain a representative sample; place all sieved soil into stainless steel bowl. Mix soil thoroughly with a scoop/trowel. Divide sieved soil into quarters. Subsample each quarter equally so the total amount of subsampled soil to be used for analysis does not exceed 1 kg or one 1-gal paint can. Place each of the four subsamples into one plastic bag. Place this plastic bag in metal 1-gal paint can. Leave about 1 inch headspace in the paint can.

Comment #7: Section 4.3, Page 12. This section discusses soil sampling with the grab method. This section is poorly developed. It does not fully explain how to remove the pavement or reference Section 4.5, Surface Soil Sampling Below Asphalt or Concrete, for further instruction. Additionally, if this method is identical to the RFP method, the reader must be referred to exact sections of that method. This method is also missing information on finding the sample location, determining how the sampling should be recorded in field books, deciding whether photographs will be taken, decontamination procedures between sample locations, and determining whether the sampling hole will be refilled. The section as written may lead to confusion and inconsistent sampling in the field.

Response: The references to this section were incorrect in the review copy. The appropriate corrections have been made.

Comment #8: Section 4.4.4, Page 14. This section explains the procedures for sampling from the surface downward using the vertical profile method. This section, however, does not discuss backfilling the excavation as other procedures do. If backfilling is not required, it should be stated.

Response: Step 4., has been added to this section which states:

> Backfill the sample location with any residual excavated material on the same day that the initial excavation and sampling is performed.

Comment #9: Section 4.5.1, Page 17, Paragraph 1. This paragraph provides background information on the sampling of soil beneath asphalt or concrete. It must explicitly state that the FSP will describe the target depth for sample collection beneath the paving because in several areas additional fill may have been placed over the original soil surface before paving the area. Therefore, sampling the first 6 inches of soil under the pavement may not accurately characterize the radionuclide inventory of the original soil. The SOP must clarify that the FSP will discuss potential problems of this type.

Response: Section 4.5.1, Paragraph 2, First Sentence, has been changed to read; "Sampling locations, the number of soil samples and quality assurance samples and any potential sampling problems will be described in each project-specific FSP."

In addition, four additional steps have been added to Section 4.5.4 to make it more usable and at the same time address this comment. The four steps are:

5. Carefully remove any fill material from directly beneath the asphalt or concrete, which may be overlying the original soil surface, with a decontaminated steel lawn of garden spade.

6. Remove debris and coarse materials such as pebbles, rocks and stones.

7. Using a stainless steel scoop or spoon, transfer the desired sample quantity into an appropriate sample container. Refer to procedure FO.13, Containerization, Preserving, Handling and Shipping of Soil and Water Samples for the type of container.

8. Label the sample container with the appropriate sample information including date and time, the samplers initials, the sample identification and sample location. Record information on the field data collection form. Handle samples according to procedure OF.13, Containerization, Preserving, Handling and Shipping of Soil and Water Samples. This documentation is a QA record and must go into the ERM records center.

Comment #10: Section 4.5.4, Page 18, Paragraph 3. This paragraph lists the procedures for surface soil sampling below asphalt or concrete. It instructs the sampler to use a wet vacuum to remove excess water generated during cutting of the cement or asphalt. The procedure list should also include directions for disposal of the potentially contaminated water.

Response: The following statement will be added to the end of Step 3 in Section 4.5.4:

> Any water collected will be placed with the used decontamination water and disposed at the decontamination pad.

Comment #11: Section 4.6.5, Page 21, Step 2. This step in the procedures for sampling cores must also specify that the core itself must be clearly marked to indicate which is the top surface prior to wrapping it in aluminum.

Response: Step 2., has been changed as follows:

> Remove the asphalt or concrete core from the cut. Clearly mark the core to indicate the top surface. First wrap the core in aluminum foil. Next, wrap the aluminum covered core in plastic wrap. Insert the wrapped core into the labeled ziplock bag.

Comment # 12: Section 4.6.5, Page 21 and 22. This paragraph lists the procedures for sampling the top one-fifth and the bottom one-fifth of the cross-section face of asphalt or concrete samples. Step number 7 asks the sampler to repeat steps 3, 4, and 5. A clearer explanation and a purpose for repeating these steps are needed.

Response: The procedure for sampling the top one-fifth and the bottom one-fifth of the sample has been made into a separate section with individual steps. This new section addresses this comment. See Section 4.6.6 for this information.